

# Occurrence of lichen planus in diabetes mellitus

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## Occurrence of lichen planus in diabetes mellitus

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### ABSTRACT

**Background:** Lichen planus is common mucocutaneous disorder that affects oral & skin areas and relatively linked to diabetes mellitus & hypertension to find that diabetes mellitus may contribute to development of lichen planus.

**Materials and method:** 324 patients (112 diabetic patients & 112 non-diabetic patients serve as controlled group, aged 18 yrs old and above were obtained from Ramadi General Hospital and College of Dentistry from November 2000 to December 2002

**Results:** 11(9.8%) patients with diabetes mellitus had lesions that fit the criteria of lichen planus.

**Conclusion:** There is no statistically significance association between the presence of lichen planus lesions & diabetes mellitus.

**Keywords:** Lichen planus, diabetes mellitus, mucocutaneous disorder (J Bagh Coll Dentistry 2005; 17(3):62- 65)

### INTRODUCTION

Lichen planus is a relatively common mucocutaneous disorder that affects approximately 0.1% to 2.0% of the general western population<sup>(1,2)</sup>. The prevalence rates may differ among races and geographic areas. Some investigations have reported a slight female predilection<sup>(1,3,4)</sup> whereas others have suggested the condition is somewhat more common in males<sup>(5)</sup>. Lichen planus primarily affects adults, with the mean age of onset in the fourth to fifth decades of life<sup>(4)</sup>. The oral lesions are frequently found on the buccal mucosa, tongue, soft palate, gingival, and lips and they may have a variety of clinical appearances. Accurate diagnosis of lichen planus may impact on a patient's health as there have been reports that lichen planus lesions may undergo malignant transformation in a small percentage of patients<sup>(6,7,8)</sup>. Lichen planus in particular, has been linked to diabetes mellitus (DM)<sup>(1)</sup> and hypertension (Grinspan's syndrome), and it has been suggested that the antihypertensive medications that the patients take may cause a lichenoid mucosal reaction<sup>(9,10)</sup>. Most of the associations between lichen planus and systemic diseases remain controversial as they rely on isolated, anecdotal evidence<sup>(4,11-14)</sup>. It has been proposed that the endocrine dysfunction in diabetes mellitus may be related to immunologic defect that may also contribute to the development of Lichen planus<sup>(15,16)</sup>.

### MATERIAL AND METHODS

Patients over the age of 18 years old with conditions that had been diagnosed as diabetes were obtained from Ramadi General Hospital, Ramadi City-Anbar from November 2000 to December 2002. Patients with diabetes mellitus of any type were excluded from the control group. To avoid any potential influence of other systemic disorders that have been reported to be associated with oral lichen planus, persons with the following conditions were excluded from the study: ulcerative colitis, alopecia areata, vitiligo, myasthenia gravis, chronic active hepatitis, primary biliary cirrhosis, multiple sclerosis, and primitive pulmonary fibrosis<sup>(14)</sup>. 112 patients were obtained for each group, demographic information was recorded for each patient who agreed to participate in the study. In addition, the patients at the diabetes clinic to obtain their medication histories, past and current, from their medical records granted permission. In addition, the length of time since the patient's diabetic condition had been diagnosed was recorded, current fasting blood glucose levels were obtained from the medical record. A visual inspection of each patient's oral cavity was conducted by two senior examiners (with double blind technique) using an artificial light, a mouth mirror, gauze, and wooden tongue blade. The diagnosis of lichen planus was based on the clinical criteria as based by Neville<sup>(4)</sup>. The reliability of making a clinical diagnosis of lichen planus on the basis of clinical criteria was approved when compared with biopsy results, student "t" test used for statistical analysis.

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## 1 RESULTS

Characteristics of each patient group are displayed in Table 1. Subject age ranged from 18 years to 78 years. The mean age of the diabetic group was 45 years, and the mean age of the control group was 47 years. Characteristics of patients who showed clinical evidence of lichen planus are displayed in Table 2 and 3. Eleven (9.8%) of the patients with diabetes mellitus had lesions that fit the diagnostic criteria for lichen planus. Six (5.3%) of the control patients had lesions that could be classified as lichen planus. Student "t" test showed that there was no association between the presence of lesions and diabetes in the diabetic patients, fasting blood glucose levels were available for all diabetic patients (table 3), including 11 diabetic patients who had lichen planus lesions, there was no significant association between glucose levels and the presence of lichen planus in these patients age, or whether medications other than insulin were taken or not.

## DISCUSSION

1 The percentage of oral lichen planus lesions in both the diabetic and (non-diabetic) control populations was higher in this study than in other reports in the literature (16-18). Borghelli *et al.* (17) reported prevalence rates of 0.55% in diabetic patients and 0.74% in their control group. Albercht *et al.* reported a 1% prevalence rate of lichen planus in the diabetic patients and no cases in their control group. (16) Patients with lesions who were taken medications that have been associated with mucosal reactions were informed of the possible implication of their medications. However, the medication implicated with the lesions prescribed by a physician other than the physician treating the diabetes. Despite the patients who were taken these medications showed any evidence of lichen planus or lichenoid lesions. The types of medications that were associated with the oral lesions, NSAIDs (non steroidal anti inflammatory drugs) and ACE (angiotensin converting enzyme) inhibitors, were statistically significant ( $p < 0.005$ ), which is similar to the findings of Robertson and Wray (13) and Potts *et al.* (19). However, Robertson and Wray reported no overall association between lichen planus and the ingestions of NSAIDs and lichen planus. Neither Potts *et al.* (19) nor

1 Robertson and Wray (13) found an association between oral lichen planus lesions and the ingestion of antihypertensive medication.

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**Table 1: Patients Characteristics.**

\* Some patients were taking more than one medicine.

	Diabetic Patients n (%)	Control Patients n (%) Non-diabetic)
<b>Sex</b>		
Men	52(46%)	57(51%)
Women	60(54%)	55(49%)
Total	112(100%)	112(100%)
<b>Age group</b>		
18-24	6(5%)	5(4%)
25-29	7(6%)	8(7%)
30-34	9(8%)	7(6%)
35-39	13(12%)	14(13%)
40-44	17(16%)	13(12%)
45-49	15(14%)	17(15%)
50-54	19(17%)	14(13%)
55-59	9(8%)	11(10%)
60-64	8(7%)	9(8%)
65-69	5(4%)	8(7%)
70-74	3(2%)	5(4%)
75+	1(1%)	1(1%)
Mean Age	45 years	47 years
<b>Taking medications that may cause mucosal lesions</b>		
None	70(63%)	76(69%)
ACE inhibitor	13(12%)	9(8%)
NSAID	9(8%)	7(6%)
Furosemide	6(5%)	8(7%)
Thiazide derivative	7(6%)	5(4%)
Sulfonamide	1(1%)	2(2%)
Propanolol	4(3%)	4(3%)
Tetracycline	2(2%)	1(1%)

**Table 2: Patients with clinical evidence of oral lichen planus**

Lesions	Diabetic Patients (n=11)	Control Patients (n=6) Non-diabetic
Reticular	7	5
Atrophic	2	1
Hyperplastic (plaque-like)	1	0
Erosive	1	0
Total	11(9.8%)	6(5.3%)

Table 3: Characteristics of patients with oral lichen planus

	Diabetic Patients n=11		Control Patients n=6
	Type I	Type II	
Sex			
Men	4	2	3
Women	4	1	3
Age group			
25-29	-	1	0
30-34	-	1	1
35-39	1	1	1
40-44	3	-	1
45-49	2	-	1
50-54	1	-	1
55-59	1	-	1
Mean age	42 years		43 years
Duration of diabetes (years)			
0-5	2	-	-
6-10	1	1	-
11-15	3	1	-
16-20	2	1	-
FBS (Mean ± S.D)	118±9 mg/dl	110±8 mg/dl	103±4 mg/dl
Taking Medication			
None	4	2	4
ACE inhibitor	3	-	1
NSAID	1	1	1

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